

## § 11.19

### § 11.19 EAS Non-participating National Authorization Letter.

This authorization letter is issued by the FCC to broadcast station licensees and cable systems and wireless cable systems. It states that the licensee, cable operator or wireless cable operator has agreed to go off the air or in the case of cable discontinue programming on all channels during a national level EAS message. For Broadcast licensees this authorization will remain in effect through the period of the initial license and subsequent renewals from the time of issuance unless returned by the holder or suspended, modified or withdrawn by the Commission.

[63 FR 29663, June 1, 1998]

### § 11.20 State Relay Network.

This network is composed of State Relay (SR) sources, leased common carrier communications facilities or any other available communication facilities. The network distributes State EAS messages originated by the Governor or designated official. In addition to EAS monitoring, satellites, microwave, FM subcarrier or any other communications technology may be used to distribute State emergency messages.

### § 11.21 State and Local Area Plans and FCC Mapbook.

EAS plans contain guidelines which must be followed by broadcast and cable personnel, emergency officials and National Weather Service (NWS) personnel to activate the EAS. The plans include the EAS header codes and messages that will be transmitted by key EAS sources (NP, LP, SP and SR). State and local plans contain unique methods of EAS message distribution such as the use of RBDS. The plans must be reviewed and approved by the Director, Office of Homeland Security, Enforcement Bureau, prior to implementation to ensure that they are consistent with national plans, FCC regulations, and EAS operation.

(a) The State plan contains procedures for State emergency management and other State officials, the NWS, and broadcast and cable personnel to transmit emergency information

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to the public during a State emergency using the EAS.

(b) The Local Area plan contains procedures for local officials or the NWS to transmit emergency information to the public during a local emergency using the EAS. Local plans may be a part of the State plan. A Local Area is a geographical area of contiguous communities or counties that may include more than one state.

(c) The FCC Mapbook is based on the above plans. It organizes all broadcast stations and cable systems according to their State, EAS Local Area and EAS designation.

[59 FR 67092, Dec. 28, 1994, as amended at 60 FR 55999, Nov. 6, 1995; 63 FR 29663, June 1, 1998; 65 FR 21658, Apr. 24, 2000; 69 FR 30234, May 27, 2004]

## Subpart B—Equipment Requirements

### § 11.31 EAS protocol.

(a) The EAS uses a four part message for an emergency activation of the EAS. The four parts are: Preamble and EAS Header Codes; audio Attention Signal; message; and, Preamble and EAS End Of Message (EOM) Codes.

(1) The Preamble and EAS Codes must use Audio Frequency Shift Keying at a rate of 520.83 bits per second to transmit the codes. Mark frequency is 2083.3 Hz and space frequency is 1562.5 Hz. Mark and space time must be 1.92 milliseconds. Characters are ASCII seven bit characters as defined in ANSI X3.4-1977 ending with an eighth null bit (either 0 or 1) to constitute a full eight-bit byte.

(2) The Attention Signal must be made up of the fundamental frequencies of 853 and 960 Hz. The two tones must be transmitted simultaneously. The Attention Signal must be transmitted after the EAS header codes.

(3) The message may be audio, video or text.

(b) The ASCII dash and plus symbols are required and may not be used for any other purpose. FM or TV call signs must use a slash ASCII character number 47 (/) in lieu of a dash.

(c) The EAS protocol, including any codes, must not be amended, extended or abridged without FCC authorization.

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The EAS protocol and message format are specified in the following representation.

Examples are provided in FCC Public Notices.

[PREAMBLE]ZCZC-ORG-EEE-  
PSSCCC+TTTT-JJHHMM-LLLLLLLLL-  
(one second pause)  
[PREAMBLE]ZCZC-ORG-EEE-  
PSSCCC+TTTT-JJHHMM-LLLLLLLLL-  
(one second pause)  
[PREAMBLE]ZCZC-ORG-EEE-  
PSSCCC+TTTT-JJHHMM-LLLLLLLLL-(at  
least a one second pause)  
(transmission of 8 to 25 seconds of Attention  
Signal)  
(transmission of audio, video or text mes-  
sages)  
(at least a one second pause)  
[PREAMBLE]NNNN (one second pause)  
[PREAMBLE]NNNN (one second pause)  
[PREAMBLE]NNNN (at least one second  
pause)

[PREAMBLE] This is a consecutive string of bits (sixteen bytes of AB hexadecimal [8 bit byte 10101011]) sent to clear the system, set AGC and set asynchronous decoder clocking cycles. The preamble must be transmitted before each header and End Of Message code.

ZCZC—This is the identifier, sent as ASCII characters ZCZC to indicate the start of ASCII code.

ORG—This is the Originator code and indicates who originally initiated the activation of the EAS. These codes are specified in paragraph (d) of this section.

EEE—This is the Event code and indicates the nature of the EAS activation. The codes are specified in paragraph (e) of this section. The Event codes must be compatible with the codes used by the NWS Weather Radio Specific Area Message Encoder (WRSAME).

PSSCCC—This the Location code and indicates the geographic area affected by the EAS alert. There may be 31 Location codes in an EAS alert. The Location code uses the Federal Information Processing Standard (FIPS) numbers as described by the U.S. Department of Commerce in National Institute of Standards and Technology publication FIPS PUB 6-4. Each state is assigned an SS number as specified in paragraph (f) of this section. Each county and some cities are assigned a CCC number. A CCC number of 000 refers to an entire State or Territory. P defines county subdivisions as follows: 0 = all or an unspecified portion of a county, 1 = Northwest, 2 = North, 3 = Northeast, 4 = West, 5 = Central, 6 = East, 7 = Southwest, 8 = South, 9 = Southeast. Other numbers may be designated later for special applications. The use of county subdivisions will probably be rare and generally for oddly shaped or unusually large counties. Any subdivisions

must be defined and agreed to by the local officials prior to use.

+TTTT—This indicates the valid time period of a message in 15 minute segments up to one hour and then in 30 minute segments beyond one hour; i.e., +0015, +0030, +0045, +0100, +0430 and +0600.

JJHHMM—This is the day in Julian Calendar days (JJJ) of the year and the time in hours and minutes (HHMM) when the message was initially released by the originator using 24 hour Universal Coordinated Time (UTC).

LLLLLLLL—This is the identification of the broadcast station, cable system, MDS/MMDS/ITFS station, NWS office, etc., transmitting or retransmitting the message. These codes will be automatically affixed to all outgoing messages by the EAS encoder.

NNNN—This is the End of Message (EOM) code sent as a string of four ASCII N characters.

(d) The only originator codes are:

Originator	ORG Code
Broadcast station or cable system .....	EAS
Civil authorities .....	CIV
National Weather Service .....	WXR
Primary Entry Point System .....	PEP

(e) The following Event (EEE) codes are presently authorized:

Nature of Activation	Event Codes
National Codes (Required):	
Emergency Action Notification (National only) .....	EAN
Emergency Action Termination (National only) .....	EAT
National Information Center .....	NIC
National Periodic Test .....	NPT
Required Monthly Test .....	RMT
Required Weekly Test .....	RWT
State and Local Codes (Optional):	
Administrative Message .....	ADR
Avalanche Warning .....	AVW <sup>1</sup>
Avalanche Watch .....	AVA <sup>1</sup>
Blizzard Warning .....	BZW
Child Abduction Emergency .....	CAE <sup>1</sup>
Civil Danger Warning .....	CDW <sup>1</sup>
Civil Emergency Message .....	CEM
Coastal Flood Warning .....	CFW <sup>1</sup>
Coastal Flood Watch .....	CFA <sup>1</sup>
Dust Storm Warning .....	DSW <sup>1</sup>
Earthquake Warning .....	EQW <sup>1</sup>
Evacuation Immediate .....	EVI
Fire Warning .....	FRW <sup>1</sup>
Flash Flood Warning .....	FFW
Flash Flood Watch .....	FFA
Flash Flood Statement .....	FFS
Flood Warning .....	FLW
Flood Watch .....	FLA
Flood Statement .....	FLS
Hazardous Materials Warning .....	HMW <sup>1</sup>
High Wind Warning .....	HWW
High Wind Watch .....	HWA
Hurricane Warning .....	HUW
Hurricane Watch .....	HUA
Hurricane Statement .....	HLS
Law Enforcement Warning .....	LEW <sup>1</sup>

Nature of Activation	Event Codes
Local Area Emergency .....	LAE <sup>1</sup>
Network Message Notification .....	NMN <sup>1</sup>
911 Telephone Outage Emergency .....	TOE <sup>1</sup>
Nuclear Power Plant Warning .....	NUW <sup>1</sup>
Practice/Demo Warning .....	DMO
Radiological Hazard Warning .....	RHW <sup>1</sup>
Severe Thunderstorm Warning .....	SVR
Severe Thunderstorm Watch .....	SVA
Severe Weather Statement .....	SVS
Shelter in Place Warning .....	SPW <sup>1</sup>
Special Marine Warning .....	SMW <sup>1</sup>
Special Weather Statement .....	SPS
Tornado Warning .....	TOR
Tornado Watch .....	TOA
Tropical Storm Warning .....	TRW <sup>1</sup>
Tropical Storm Watch .....	TRA <sup>1</sup>
Tsunami Warning .....	TSW
Tsunami Watch .....	TSA
Volcano Warning .....	VOW <sup>1</sup>
Winter Storm Warning .....	WSW
Winter Storm Watch .....	WSA

<sup>1</sup> Effective May 16, 2002, broadcast stations, cable systems and wireless cable systems may upgrade their existing EAS equipment to add these event codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003 must be capable of receiving and transmitting these event codes. Broadcast stations, cable systems and wireless cable systems which replace their EAS equipment after February 1, 2004 must install equipment that is capable of receiving and transmitting these event codes.

(f) The State, Territory and Offshore (Marine Area) FIPS number codes (SS) are as follows. County FIPS numbers (CCC) are contained in the State EAS Mapbook.

	FIPS#
State:	
AL .....	01
AK .....	02
AZ .....	04
AR .....	05
CA .....	06
CO .....	08
CT .....	09
DE .....	10
DC .....	11
FL .....	12
GA .....	13
HI .....	15
ID .....	16
IL .....	17
IN .....	18
IA .....	19
KS .....	20
KY .....	21
LA .....	22
ME .....	23
MD .....	24
MA .....	25
MI .....	26
MN .....	27
MS .....	28
MO .....	29
MT .....	30
NE .....	31
NV .....	32
NH .....	33
NJ .....	34
NM .....	35
NY .....	36

	FIPS#
NC .....	37
ND .....	38
OH .....	39
OK .....	40
OR .....	41
PA .....	42
RI .....	44
SC .....	45
SD .....	46
TN .....	47
TX .....	48
UT .....	49
VT .....	50
VA .....	51
WA .....	53
WV .....	54
WI .....	55
WY .....	56
Terr.:	
AS .....	60
FM .....	64
GU .....	66
MH .....	68
MH .....	68
PR .....	72
PW .....	70
UM .....	74
VI .....	78
Offshore (Marine Areas) <sup>1</sup> :	
Eastern North Pacific Ocean, and along U.S. West Coast from Canadian border to Mexican border .....	57
North Pacific Ocean near Alaska, and along Alaska coastline, including the Bering Sea and the Gulf of Alaska .....	58
Central Pacific Ocean, including Hawaiian waters .....	59
South Central Pacific Ocean, including American Samoa waters .....	61
Western Pacific Ocean, including Mariana Island waters .....	65
Western North Atlantic Ocean, and along U.S. East Coast, from Canadian border south to Currituck Beach Light, N.C. ....	73
Western North Atlantic Ocean, and along U.S. East Coast, south of Currituck Beach Light, N.C., following the coastline into Gulf of Mexico to Bonita Beach, FL., including the Caribbean ..	75
Gulf of Mexico, and along the U.S. Gulf Coast from the Mexican border to Bonita Beach, FL ...	77
Lake Superior .....	91
Lake Michigan .....	92
Lake Huron .....	93
Lake St. Clair .....	94
Lake Erie .....	96
Lake Ontario .....	97
St. Lawrence River above St. Regis .....	98

<sup>1</sup> Effective May 16, 2002, broadcast stations, cable systems and wireless cable systems may upgrade their existing EAS equipment to add these marine area location codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003, must be capable of receiving and transmitting these marine area location codes. Broadcast stations, cable systems and wireless cable systems which replace their EAS equipment after February 1, 2004, must install equipment that is capable of receiving and transmitting these location codes.

[59 FR 67092, Dec. 28, 1994, as amended at 60 FR 55999, Nov. 6, 1995; 61 FR 54952, Oct. 23, 1996; 63 FR 29663, June 1, 1998; 67 FR 18508, Apr. 16, 2002; 67 FR 77174, Dec. 17, 2002]

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### § 11.32 EAS Encoder.

(a) EAS Encoders must at a minimum be capable of encoding the EAS protocol described in §11.31 and providing the EAS code transmission requirements described in §11.51. EAS encoders must additionally provide the following minimum specifications:

(1) *Encoder programming.* Access to encoder programming shall be protected by a lock or other security measures and be configured so that authorized personnel can readily select and program the EAS Encoder with Originator, Event and Location codes for either manual or automatic operation.

(2) *Inputs.* The encoder shall have two inputs, one for audio messages and one for data messages (RS-232C with standard protocol and 1200 baud rate).

(3) *Outputs.* The encoder shall have two outputs, one audio port and one data port (RS-232C with standard protocol and 1200 baud rate).

(4) *Calibration.* EAS Encoders must provide a means to comply with the modulation levels required in §11.51(f).

(5) *Day-Hour-Minute and Identification Stamps.* The encoder shall affix the JJJHHMM and LLLLLLLL codes automatically to all initial messages.

(6) *Program Data Retention.* Program data and codes shall be retained even with the power removed.

(7) *Indicator.* An aural or visible means that it activated when the Preamble is sent and deactivated at the End of Message code.

(8) *Spurious Response.* All frequency components outside 200 to 4000 Hz shall be attenuated by 40 dB or more with respect to the output levels of the mark or space frequencies.

(9) *Attention Signal generator.* The encoder must provide an attention signal that complies with the following:

(i) *Tone Frequencies.* The audio tones shall have fundamental frequencies of 853 and 960 Hz and not vary over  $\pm 0.5$  Hz.

(ii) *Harmonic Distortion.* The total harmonic distortion of each of the audio tones may not exceed 5% at the encoder output terminals.

(iii) *Minimum Level of Output.* The encoder shall have an output level capability of at least +8 dBm into a 600 Ohm load impedance at each audio

tone. A means shall be provided to permit individual activation of the two tones for calibration of associated systems.

(iv) *Time Period for Transmission of Tones.* The encoder shall have timing circuitry that automatically generates the two tones simultaneously for a time period of not less than 8 nor longer than 25 seconds. NOTE: Prior to July 1, 1995, the Attention Signal must be at least 20 and not more than 25 seconds.

(v) *Inadvertent activation.* The switch used for initiating the automatic generation of the simultaneous tones shall be protected to prevent accidental operation.

(vi) *Indicator Display.* The encoder shall be provided with a visual and/or aural indicator which clearly shows that the Attention Signal is activated.

(b) *Operating Temperature and Humidity.* Encoders shall have the ability to operate with the above specifications within an ambient temperature range of 0 to +50 degrees C and a range of relative humidity of up to 95%.

(c) *Primary Supply Voltage Variation.* Encoders shall be capable of complying with the requirements of this section during a variation in primary supply voltage of 85 percent to 115 percent of its rated value.

(d) *Testing Encoder Units.* Encoders not covered by §11.34(e) of this part shall be tested in a 10 V/m minimum RF field at an AM broadcast frequency and a 0.5 V/m minimum RF field at an FM or TV broadcast frequency to simulate actual working conditions.

### § 11.33 EAS Decoder.

(a) An EAS Decoder must at a minimum be capable of decoding the EAS protocol described in §11.31, provide the EAS monitoring functions described in §11.52, and the following minimum specifications:

(1) *Inputs.* Decoders must have the capability to receive at least 2 audio inputs from EAS monitoring assignments, and one data input (RS-232C with standard protocol and 1200 baud rate). The data input may be used to monitor other communications modes such as Radio Broadcast Data System (RBDS), NWR, satellite, public switched telephone network, or any